

CCACGCGTCCGCGCGGGAGCTGCTTGGAGGCTCGGCGGCCGGGAGGAGGCCGGGGCCACGCTTCTTGGAA
GCTACTGAGTGACTTCTTTGAAGAACCATGAAGTCACACTATATTGTGCTAGCTCTAGCCTCCCTGACGT
TCCTGCTGTGTCTCCCCGTGTCCCAGAGCTGTAACAAAGCACTCTGTGCCAGCGATGTGAGCAAATGCCT
CATTCAGGAGCTCTGCCAGTGCCGGCCTGGAGAAGGGAACCTGCCCCCTGCTGTAAGGAGTGCATGCTGTGC
CTCGGGGCCCTGTGGGACGAGTGCTGCGACTGTGTGCGGTATGTGCAACCCTCGGAATTACAGCGACACCC
CGCCACATCCAAGAGCACCGTGGAGGAGCTGCACGAGCCCATTCCGTCCCTGTTTCAGGGCGCTGACGGA
GGGCGACACCCAGCTGAACTGGAACATCGTCTCCTTCCCTGTGGCAGAGGAGCTGTACACCATGAAAAC
CTAGTCTCCTTCTTAGAACTGTGAACCAGCTGCACCACCAAAACGTGTCTGTTCCCAGCAACAATGTCC
ACGCCCCCTTCCCCAGCGACAAAGAGCGCATGTGCACAGTGGTTTACTTTGATGACTGCATGTCCATCCA
CCAGTGTAAGATATCCTGCGAATCCATGGGTGCATCCAAGTATCGCTGGTTTCACAACGCCTGCTGCGAG
TGCATCGGTCCAGAGTGCATTGACTATGGGAGTAAACTGTCAAGTGTATGAACTGCATGTTTTAAAGAG
GGGGAAGAAATGCAAACCAAGCAAGAACGCTGACGATGCCGTTGACACTCCTACCTTGCAGGATGTCCC
CACAGAGTCCACTGGACCAGCTTGTACAAGGGTGAAACCTTTCTGCGTCACCTTTCTGCTTTTGCAGAGC
CATGACAGCAGCTGCCTTACAGCGTGATTTAGCAGACAGACCTGACAGGTGTGTATGTGACAGGCAGCC
ATCAGGGTGGCCTAGCACATTTGTGGGTGCTGATGTTGTATTGCACTGTCAAAGACTGACCAGTCCTGAT
AGGGCTGGAAAGAGGAAAGGGGTGTGGGAAGGTGACTTTCTTAGCTCTCCCGTAGCAGCACACTGTCATA
GTGTCTCAGTGTATATTGCTGTGAAGAGACACCACAACCAAGGCAGCTTATGAAGAAAGCCCTTAATTA
GGGCTCGCTTTACAGTTCGAGGTTACTTCTGGTCTGTCGTTGGGATGAGGCAGTAGGTAGCAGGCA
TGGTGTGGAGCAGTAGCTGAATGTTGGTTCACAAACTTAGCACCTCGAGTCATGATAGAAACACCATCC
AGGCCTTGAAGCCCAACACGTAGCAACACCCTTGCCAAAGCAGGATCAAGGCTCTGTGAGCGTCCCAGG
ATGCAGTTGGGCAAGTTCTTGAGTGAAATTCCTATACATACTAACTCTGCAATTTTGCTTCTATAGTTCC
TCTTCTTGTTAACTATATGTCCAGAACCATTTTCAAGATATGG
GTTTTTGTGAATAAAAAAATAAAAAAGGCCTGGTCTGCATAGATTGGGCAAGTTCCCTTGCAGCCACAGG
CTAACAGTAAAGACTTTCTATTTGGCTTTAGGAGTATCCAAGGGGTGGTCTCTCGTGAGAGTACCTCGCA
ACAGCAGCAGATGGTGTGGAGGCTTGGCCTGCTGTGGGCTTTTGAAACCTTAAAGTCCACCCCCAGTGA
CACGCTCCTCCAATAACACCACACCTCCTAATCCTTTCTAAGTAGTCCCTCAACTGGGAACCAAGCATT
CAGATATACGAGCCCAAAAGGCCATTCTCGTTCAAACCACCACATGTAATAAAATATATGCCACGTCAA
AAAAAAAAAAAAAAAAAAAA (SEQ ID NO:1)

MKSHYIVLALASLTFLCLPVSQSCNKALCASDVSKCLIQELCQCRPGEGNCPCC
KECMLCLGALWDECCDCVGM CNPRNYS DTPPTSKSTVEELHEPIPSLFRALTEG
DTQLNWNIVSFPVAEELSHHENLVSFLETVNQLHHQNVSVPSNNVHAPFPSDKE
RMCTVVYFDDCMSIHQCKISCESMGASKYRWFHNACCECIGPECIDYGSKT VKC
MNCMF (SEQ ID NO:2)

FIG. 1

red underlined = deleted in targeting construct

green = sequence flanking Neo insert in targeting construct

CCACGCGTCCGCGCGGGAGCTGCTTGGAGGCTCGGCGGCCGGGAGGAGGCCGGGGCCACG
CTTCTTGAAGCTACTGAGTGACTTCTTTGAAGAACCATGAAGTCACACTATATTGTGCT
AGCTCTAGCCTCCCTGACGTTCCCTGCTGTGTCTCCCGTGTCCCAGAGCTGTAACAAAGC
ACTCTGTGCCAGCGATGTGAGCAAATGCCTCATTCAGGAGCTCTGCCAGTGCCGGCCTGG
AGAAGGGAAC TGCCCCTGCTGTAAGGAGTGCA TGCTGTGCCTCGGGGCCCTGTGGGACGA
GTGCTGCGACTGTGTCTGGTATGTGCAACCCTCGGAATTACAGCGACACCCCGCCACATC
CAAGAGCACCGTGGAGGAGCTGCACGAGCCCATTCGCTCCCTGTTCAGGGCGCTGACGGA
GGGCGACACCCAGCTGAAC TGGAACATCGTCTCCTTCCCTGTGGCAGAGGAGCTGTCA
CCATGAAAACCTAGTCTCCTTCCCTAGAAAAC TGTAACCAGCTGCACCACCAAAACGTGTC
TGTTCCCAGCAACAATGTCCACGCCCCCTTCCCCAGCGACAAAAG [AGCGCATGTGCACAGT
GGTTTACTTTGATGACTGCATGTCCATCCACCAGTGTA] AGATATCCTGCGAATCCATGGG
TGCATCCAAGTATCGCTGGTTTTCACAAACGCTGCTGCGAGTGTCATCG [GTCCAGAGTGTCAT
TGACTATGGGAGTAAACTGTCAAGTGTATGAACTGCATGTTTTAAAGAGGGGGAAGAAA
TGCAAACCAAGCA] AGAACGCTGACGATGCCGTGACACTCCTACCTTGCCAGGATGTCCC
CACAGAGTCCACTGGACCAGCTTGTACAAGGGTGAAACCTTTCTGCGTCACCTTTCTGCT
TTTGCAGAGCCATGACAGCAGCTGCCTTACAGCGTGATTTAGCAGACAGACCTGACAGGT
GTGTCATGTGACAGGCAGCCATCAGGGTGGCCTAGCACATTTGTGGGTGCTGATGTTGTA
TTGCACTGTCAAAGACTGACCAGTCCTGATAGGGCTGGAAAAGAGGAAAGGGGTGTGGGAA
GGTGACTTTCTTAGCTCTCCCGTAGCAGCACACTGTCATAGTGTCTCAGTGTTCATATTGC
TGTGAAGAGACACCACAACCAAGGCAGCTTATGAAGAAAGCCCTTAATTAGGGCTCGCTT
TACAGTTCCGAGGTACTTCTTGGTCTGCTGGTGGGGATGAGGCAGTAGGTAGCAGGCA
TGGTGCTGGAGCAGTAGCTGAATGTTGGTTCACAACTTAGCACCTCGAGTCATGATAGA
AACACCATCCAGGCCTTGAAGCCCAACACGTAGCAACACCACTTGCCAAAGCAGGATCAA
GGCTCTGTGACGCTCCCAGGATGCAGTTGGGCAAGTTCTTGAGTGAAATTCCTATACATA
CTAACTCTGCAATTTTGCTTCTATAGTTCTCTTCTGTGTTAACTATATGTCCAGAACCAT
TTCAGAATATGGGTTTTTGTGAATAAAAAAATAAAAAAGGCCTGGTCTGCATAGATTGGG
CAAGTTCCCTTGCAGCCACAGGCTAACAGTAAAGACTTTCTATTTGGCTTTAGGAGTATC
CAAGGGGTGGTCTCTCGTGAGAGTACCTCGCAACAGCAGCAGATGGTGTGAGGCTTGG
CCTGCTGTGGGCTTTTGAACCTTAAAGTCCACCCCAAGTGACACGCCTCCTCCAATAAC
ACCAACCTCCTAATCCTTTCTAAGTAGTCCCTCAACTGGGAACCAAGCATTTCAGATATA
CGAGCCCAAAAGGCCATTCTCGTTCAAACCACCATGTAATAAAATATATGCCACGTC
AAAAAAAAAAAAAAAAAAAA (SEQ ID NO:1)

FIG. 2A

Gene Sequence Structure *

639 bp

Sequence Deleted

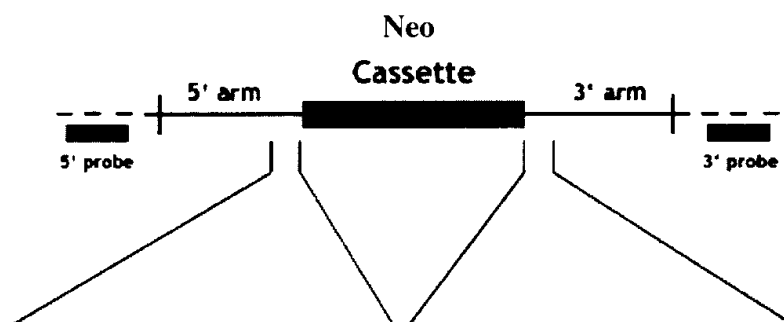
707 bp

Size of full-length
cDNA: 1879 bp

Targeting Vector* (genomic sequence)

Construct Number: 203

Arm Length:
5': 1.9 kb
3': 3.6 kb



5' >AACAAATGAAGATCTTTTGTC
CCTCGTTTTTGTCTGTGCTGATG
AGCAGTAAGAGGGCTAGAAAGTAA
CTGCAGGTATTCTCTGAGCAAGCG
AGCGAGTGGCCGAGCTCTTCCTGC
CTGTACTGAAATGTCCCTTTGCAT
TTCAGAGCGCATGTGCACAGTGGT
TTACTTTGATGACTGCATGTCCAT
CCACCAGTGTA<3' (SEQ ID
NO: 3)

5' >GTCCAGAGTGCATTGACTATG
GGAGTAAACTGTCAAGTGTATGA
ACTGCATGTTTTAAAGAGGGGAA
GAAATGCAAACCAAAGCAGTAAGT
CATGAAGTGTGCAGAAATCTTGGT
TCTGGTATGCTAGGAGTGTGTAA
GTTATATGATTGTAAGTGTGCTTT
TTATATCTGGTGCCTATTAGTGTA
GGTCTTTTCCA<3' (SEQ ID
NO: 4)

————— Targeting Vector
- - - - - Endogenous Locus

* Not drawn to scale

FIG. 2B